



**Crown Estate
Scotland**

Oighreachd a' Chrùin Alba

Offshore wind: sector profile





Seagreen Phase 1 in construction.
Credit Ed Maxwell, Seagreen/SSE Renewables.

Introduction

Crown Estate Scotland manages property – including buildings, land, coastline and seabed – on behalf of the Scottish people.

We play a central role in the development of offshore wind, primarily by awarding and managing seabed leases. We also work with developers and a wide range of industry stakeholders to enable a sustainable and successful offshore wind sector in Scotland.

Offshore wind is already Scotland's second largest source of renewable energy, and this capacity is set to increase dramatically over the coming decade.

There are currently three commercial fixed bottom (Robin Rigg, Beatrice and Moray East) and four Test and Demonstration (T&D) offshore wind farms, two of which are floating (Hywind Scotland and Kincardine). These are generating significant amounts of clean electricity and creating lasting jobs around our coastline. Two further wind farms are under construction, including Scotland's largest offshore wind farm, Seagreen Phase 1.

Our role in offshore wind

As well as awarding and managing seabed leases, we contribute to the success of offshore wind in Scotland by:

- Supporting developers through the various stages of project development, construction and operation.
- Collaborating on efforts to address environmental and technical challenges.
- Working with industry to reduce costs and build investor confidence.
- Supporting supply chain development and industry collaboration.

Offshore wind has a big role to play in helping Scotland meet its key climate targets:



Generating 50% of the country's overall energy consumption from renewable sources by 2030.



Reaching net zero emissions by 2045.

Scotland is at the forefront of offshore wind:

- Home to both the first and largest operational floating wind farms in the world.
- Largest pipeline in the world of seabed agreements for commercial scale floating wind (almost 5000km²).
- Seagreen is the deepest fixed-bottom project in the world.
- Berwick Bank is the largest project in the UK.
- INTOG is the first leasing round of its kind.
- The diversity of ScotWind projects around the coast gives us the potential to host a wide range of technologies and solutions.

Offshore wind in Scottish waters



Table – Project details

Ref no	Project Name	Capacity/Intended capacity (MW)	Project owner(s)
1	Robin Rigg (East and West)	174	RWE
2	Forthwind	12	Cierco Ltd
3	Levenmouth Demonstration	7	ORE Catapult
4	Near na Gaoithe	448	EDF, ESB
5 6	Berwick Bank (including Marr Bank)	4,100	SSE Renewables

7	Inch Cape	1,008	Red Rock Power Ltd, ESB
8	Seagreen Phase 1	1,140 ¹	SSE Renewables, TotalEnergies
9	Seagreen Phase 1a	500	SSE Renewables, TotalEnergies
10	Morven (E1)	2,907	BP, EnBW
11	Ossian (E1)	2,610	SSE Renewables, Marubeni, COP
12	Bellrock (E1)	1,200	BlueFloat Energy, Renantis
13	Kincardine	49.5	Cobra
12	Cluaran Deas Ear (E3)	1,008	Thistle Wind Partners
15	European Offshore Wind Deployment Centre (Aberdeen)	96.8	Vattenfall
16	Muir Mhor (E2)	798	Fred Olsen, Vattenfall
17	Campion (E2)	2,000	ScottishPower Renewables, Shell UK
18	Hywind Scotland	30	Equinor, Masdar
19	Moray West	882	Ocean Winds, Ignitis
20	Beatrice	588	SSE Renewables, Red Rock Power Ltd, TRIG, Equitix
21	Moray East	952.5	Ocean Winds, Diamond Generating Europe, China Three Gorges
22	Caledonia (NE4)	1,000	Ocean Winds
23	Broadshore (NE6)	500	Renantis, BlueFloat Energy
24	Buchan (NE8)	960	BayWa/Ideol/Elicio (Floating Energy Alliance)
25	Marram Wind (NE7)	3,000	ScottishPower Renewables, Shell UK
26	Stromar (NE3)	1,000	Orsted, Bluefloat Energy, Renantis
27	Cluaran Ear-Thuath (NE2)	1,008	Thistle Wind Partners
28	Ocean Winds Shetland (NE1)	500	Ocean Winds
29	Arven (NE1)	1,800	Mainstream Renewable Power, Ocean Winds
30	Sealtainn (NE1)	500	ESB
31	Pentland	100	Copenhagen Infrastructure Partners, Hexicon AB
32	West of Orkney Wind farm (N1)	2,000	RIDG, Total Energies, Corio
33	ScotWind (N2)	1,500	Northland Power
34	Talisk (N3)	495	Magnora, TechnipFMC
35	ScotWind (N4)	840	Northland Power
36	Machair Wind (W1)	2,000	ScottishPower Renewables

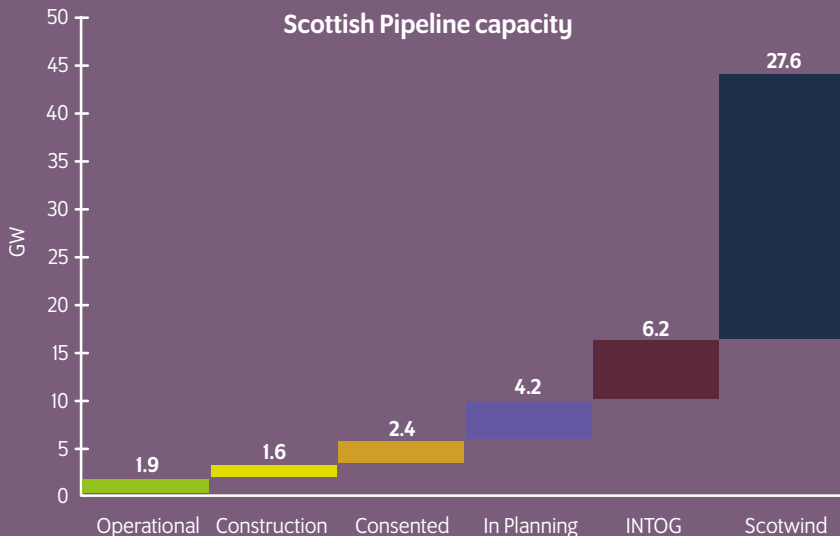
Scottish Offshore Wind Assets Profile

As of January 2023, there are 37 offshore wind projects in Scotland, eight of which are fully operational with 265 turbines and total installed capacity of 1,898MW. The operating projects have annual energy production of approximately 6,700GWh. The two sites currently under construction will add a further 168 turbines with total installed capacity of 1,588MW.

20 projects with a combined intended installed capacity of 27.6GW have now entered option agreements via the ScotWind leasing process. This resulted in Option Fees of £755m in total. A key part of ScotWind was the supply chain commitments made by

applicants which show an average initial commitment of £1.4bn per project of investment in Scotland. Full seabed leases come at a later stage after consents, offtake agreements and financing are in place.

The remaining 6.6GW of pre-ScotWind sites include Test and Demonstration, Scottish Territorial Waters (STW) and Round 3 projects at various stages of development. Three of these projects have secured Government support through the Contracts for Difference, including two being successful in the latest allocation round (AR4) in the Summer 2022.



NB: the graph is not a linear timeline.

INTOG

- INTOG is a new leasing opportunity for offshore wind farms to help maximise value from commercial scale deployment and to reduce the carbon emissions associated with North Sea oil and gas production.
- It will help stimulate Scotland's offshore renewables innovation and associated supply chain, help new companies enter the renewable energy sector and progress the 'just transition'.
- It has two distinct elements
 - Innovation (IN) which is for small scale innovation projects of 100MW or less, and
 - Targeted Oil and Gas (TOG) which is specifically designed for offshore wind farms which target the electrification of oil and gas installations.
- On 13 December 2022 we confirmed that a total of 19 applications had been made for INTOG.
- This level of interest from industry demonstrates significant support for this exciting new opportunity.
- Of the 19 applications, 10 are for the Innovation part, while nine have been submitted for the TOG element. These applications have been sited in those locations set out in the Scottish Government's Initial Planning Framework.
- The offer of Exclusivity Agreements for both IN and TOG projects is anticipated to be announced by the end of April 2023. Exclusivity Agreements will then be finalised.



Supply Chain Development

- In the first initiative of its kind, the Supply Chain Development Statement process introduced for ScotWind and INTOG ensures early-stage and continued engagement with the supply chain to better understand and communicate expectations and opportunities.
- Through detailed engagement with industry and stakeholders, we support the development of the supply chain required to ensure the timely delivery of the projects.
- We support the strategic infrastructural planning and socio-economic development necessary to enable Scotland to maximise the benefits of offshore wind development.
- The collaborative approach to supply chain investment is evidenced by our work in SOWEC and partnership working.
- Our investment priorities in energy ports remains a key focus.

Enabling the Offshore Wind Sector

- Crown Estate Scotland works with the sector and its many stakeholders to enable successful projects and a thriving industry in Scotland.
- Our top priorities for the years ahead have been identified as:
 - Grid and hydrogen development for power export.
 - Delivering floating wind at gigawatt scale.
 - Solutions for the busy blue economy.
 - Pioneering models for supply chain collaboration.
- Supporting Scotland's projects to be world-leading examples.
- We also provide core support and funding to the Scottish Offshore Wind Energy Council.

